

In the Claims

1. (Currently amended) A nerve regeneration device comprising a polyhydroxyalkanoate polymer in the form of a porous conduit wherein the polyhydroxy-alkanoate polymer comprises 4-hydroxybutyrate.
2. (Canceled)
3. (Currently amended) The device of claim 2 1 wherein the polymer is poly-4-hydroxybutyrate.
4. (Original) The device of claim 1 wherein the pores of the conduit are greater than 5µm in diameter.
5. (Original) The device of claim 1 wherein the pores of the conduit are less than 500 µm in diameter.
6. (Original) The device of claim 1 wherein the conduit comprises a material selected from the group consisting of nerve cells, growth factors, and drugs.
7. (Currently amended) A method for preparing a nerve regeneration device comprising a polyhydroxyalkanoate polymer in the form of a porous conduit wherein the polyhydroxyalkanoate polymer comprises 4-hydroxybutyrate and wherein the device is prepared by thermally induced phase separation of the polymer in a solvent in combination with salt particles, removing the polymer solvent, and removing the salt particles.
8. (Original) The method of claim 7 comprising leaching with an alcohol followed by leaching with water or a solution comprising a surfactant.

9. (Currently amended) The method of claim 7 ~~for preparing the device of claim 1~~ wherein the device is prepared by a combination of thermally induced phase separation and poragen leaching.

10. (Original) The method of claim 8 wherein the surfactant is a polysorbate

11. (Currently amended) A method of nerve repair or regeneration comprising providing a nerve regeneration device comprising a polyhydroxyalkanoate polymer in the form of a wrapped porous conduit wherein the polyhydroxyalkanoate polymer comprises 4-hydroxybutyrate.

12. (Original) The method of claim 11 comprising inserting severed nerve ends into the conduit or wrapping the nerve ends with the polymer and sealing it into a conduit.

13. (Original) The method of claim 12 wherein the device is sealed by application of heat.

14. (Original) The method of claim 11 providing an axonal regeneration rate of at least 0.8 mm per day across a 10 mm sciatic nerve gap in an animal or human.